

IN THE CLAIMS:

Please **AMEND** claims 1-18 as shown below.

Please **ADD** new claims 19-21 as shown below.

1. (Currently Amended) A method ~~of~~ for traffic and resource control in a wireless communication device comprising with a plurality of operation modes, the method ~~comprising the steps of:~~

assembling data units of at least one incoming data stream into an output data stream, wherein the data units are destined for at least one destination node, and each destination node comprises ~~and a service level requirement; attached to each of the at least one destination node;~~

selecting, in response to the assembling, a first set of radio transmission resources for the output data stream, wherein the first set of radio transmission resources belongs to radio transmission resources available in the wireless communication device;

searching for a path that leads from the wireless communication device to one of the at least one destination node and fulfills the service level requirement corresponding to that destination node when one leg of the path is implemented by the first set of radio transmission resources, wherein the searching ~~step~~ is performed with respect to each of the at least one destination node; and

scheduling a transmission of the output data stream when the path is found for each of the at least one destination node ~~in the searching step~~, wherein the scheduling transmission is scheduled to ~~presumes that the transmission is to~~ occur through the first set of radio transmission resources; ~~and,~~

~~controlling the operation modes of the wireless communication device so that (1) an operation mode corresponding to the first set of radio transmission resources is active when the transmission is scheduled to occur and that (2) the wireless communication device~~

~~is with respect to its other operation modes in a state where the service level requirement of each destination node is maintained during the transmission.~~

2. (Currently Amended) A method according to claim 1, further comprising:

~~a step of determining a path~~ comprising a having the highest service level of all paths leading to a destination node, wherein the determining ~~step~~ is performed for a the destination node to which no path fulfilling the corresponding service level requirement is found.

3. (Currently Amended) A method according to claim 2, further comprising: ~~the steps of:~~

configuring the first set of radio transmission resources;

testing whether the determined path comprising having the highest service level fulfills the service level requirement for the at least one destination node in response to the configuring ~~step~~; and

scheduling a transmission of the output data stream when the determined path fulfills the service level requirement for the at least one destination node, wherein the ~~transmission is scheduled to~~ scheduling presumes that the transmission is to occur through the first set of radio transmission resources,

wherein the configuring ~~step~~ is performed when no path fulfilling the respective service level requirement is found for the at least one destination node in the searching. ~~step.~~

4. (Currently Amended) A method according to claim 1, further comprising: ~~the steps of:~~

choosing a second set of radio transmission resources for the output data stream;

~~repeating the searching step for the second set of radio transmission resources; and~~

re-searching, in response to the choosing, for a path that leads from the wireless communication device to one of the at least one destination node and fulfills the service level requirement corresponding to that destination node when one leg of the path is implemented by the second set of radio transmission resources, wherein the searching is performed with respect to each of the at least one destination node; and

scheduling a transmission transfer of the output data stream when the path is found for each of the at least one destination node in the re-searching, repeating step, wherein the ~~transmission is scheduled to~~ scheduling presumes that the transmission is to occur through the second set of radio transmission resources.

5. (Currently Amended) A method according to claim 4, further comprising: ~~the steps of~~

configuring the radio transmission resources available in the wireless communication device.

6. (Currently Amended) A method according to claim 4, further comprising:
~~a step of~~ rearranging the data units in the output data stream.

7. (Currently Amended) A method according to claim 1, wherein the searching ~~step includes~~ comprises finding all paths leading from the wireless communication device to the at least one destination node.

8. (Currently Amended) A method according to claim 7, wherein the searching ~~step further~~ comprises performing the finding ~~step~~ in another network element.

9. (Currently Amended) A method according to claim 19, wherein the controlling ~~step includes~~ comprises changing the operation mode of the wireless communication device prior to the transmission of the ~~at least one~~ output data stream.

10. (Currently Amended) A method according to claim 1, wherein the selecting ~~step comprises~~ utilizing information about a current state of the radio transmission resources available in the wireless communication device.

11. (Currently Amended) A method according to claim 19, wherein the other operation modes comprise ~~include~~ a plurality of operation states; and the controlling ~~step includes~~ comprises synchronizing the plurality of operation states for maintaining ~~to maintain~~ the service level requirement of each destination node during the transmission.

12. (Currently Amended) A system for traffic and resource control in a wireless communication device comprising ~~with~~ a plurality of operation modes, the system comprising:

traffic assembly means for assembling incoming data unit streams into an output data stream, wherein the data units of the output stream are destined for at least one destination node, and the output stream comprises ~~having~~ a service level requirement for each of the at least one destination node;

resource selection means, responsive to the traffic assembly means, for selecting a first set of radio transmission resources for the output data stream, wherein the first set of radio transmission resources belongs to radio transmission resources currently available in the wireless communication device;

routing means for searching for a path that leads to one of the at least one destination node and fulfills the service level requirement corresponding to that destination node when one leg of the path is implemented by the first set of radio transmission

resources, wherein the routing means for searching being configured to search for the path
are configured to search for the path for each of the at least one destination node; and

traffic scheduling means for scheduling a transmission of the output data stream
when the path is found for each of the at least one destination node, wherein the
transmission is scheduled to occur through the first set of radio transmission resources; and

~~control means for controlling the operation modes of the wireless communication
device so that (1) an operation mode corresponding to the first set of radio transmission
resources is active when the transmission is scheduled to occur and that (2) the wireless
communication device is with respect to its other operation modes in a state where the
service level requirement of each destination node is maintained during the transmission.~~

13. (Currently Amended) A system according to claim 120, wherein the traffic
assembly means, the resource selection means, the traffic scheduling means, and the control
means reside in a single wireless communication device.

14. (Currently Amended) A system according to claim 120, wherein: the other
operation modes comprise include a plurality of operation states; and the control means are
~~configured to synchronize~~ is further for synchronizing the plurality of operation states to
maintain the service level requirement of each destination node during the transmission.

15. (Currently Amended) A wireless communication device comprising with a
plurality of operation modes, the wireless communication device comprising:

a traffic assembly unit configured to assemble for assembling incoming data unit
streams into at least one output data stream, wherein the data units are destined for at least
one destination node, and each the output data stream comprises having a service level
requirement for each of the at least one destination node;

a resource selection unit responsive to the traffic assembly unit and configured to select for selecting a first set of radio transmission resources for the output data stream, wherein the first set of radio transmission resources belongs to radio transmission resources currently available in the wireless communication device;

a path detection unit, configured to detect ~~means, for detecting~~ whether a path leading to a destination node and fulfilling the corresponding service level requirement is available for each of the at least one destination node, wherein one leg of the path is implemented by the first set of transmission resources; and

a traffic scheduling unit, responsive to the path detection ~~means-unit~~, for scheduling-configured to schedule a transmission of the output data stream, wherein the traffic scheduling unit is configured to schedule the transmission to occur through the first set of radio transmission resources; and

~~a control unit configured to control means for controlling the operation modes so that (1) an operation mode corresponding to the first set of radio transmission resources is active when the transmission is scheduled to occur and that (2) the wireless communication device is with respect to its other operation modes in a state where the service level requirement of each destination node is maintained during the transmission.~~

16. (Currently Amended) A wireless communication device according to claim 15, wherein the path detection unit means comprises an interface for towards a routing entity residing outside the wireless communication device, wherein the interface is being configured to receive information about paths leading from the wireless communication device to the at least one destination node.

17. (Currently Amended) A wireless communication device according to claim 15, wherein the path detection unit means comprises a routing unit configured to search means

~~for searching all paths leading from the wireless communication device to the destination node.~~

18. (Currently Amended) ~~The A~~-wireless communication device according to claim ~~21~~5, wherein the other operation modes comprise ~~include~~ a plurality of operation states; and the control unit is further ~~means are~~ configured to synchronize the plurality of operation states to maintain the service level requirement of each destination node during the transmission.

19. (New) A method according to claim 1, further comprising:

controlling the operation modes of the wireless communication device so that an operation mode corresponding to the first set of radio transmission resources is active when the transmission is scheduled to occur and the wireless communication device is with respect to its other operation modes in a state where the service level requirement of each destination node is maintained during the transmission.

20. (New) A system according to claim 12, further comprising:

control means for controlling the operation modes of the wireless communication device so that an operation mode corresponding to the first set of radio transmission resources is active when the transmission is scheduled to occur and that the wireless communication device is with respect to its other operation modes in a state where the service level requirement of each destination node is maintained during the transmission.

21. (New) A wireless communication device according to claim 15, further comprising:

a control unit configured to control the operation modes so that an operation mode corresponding to the first set of radio transmission resources is active when the transmission

is scheduled to occur and that the wireless communication device is with respect to its other operation modes in a state where the service level requirement of each destination node is maintained during the transmission.